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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/685,412	10/10/2000	Koji Hasegawa	SONY-U0256	4878

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EXAMINER

TRAN, KHANH C

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 11/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

120

Office Action Summary	Application No. 09/685,412	Applicant(s) HASEGAWA ET AL.	
	Examiner Khanh Tran	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-8 and 10-15 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5-8 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 3,4,10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Request for Reconsideration filed on 09/07/2006 has been entered.

Claims 1, 3-8 and 10-15 are pending in this Office action.

Response to Arguments

2. Applicant's arguments, see Applicants' Remarks on pages 2-4, filed on 09/07/2006, with respect to the rejection(s) of claim(s) 1, 3-8 and 10-15 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Krasner U.S. Patent 6,064,336 and U.S. Patent 6,150,980, both previously cited.

Examiner's response to Applicants' arguments: in the Remarks, Applicants correctly pointed out that the '980' US Patent, as recited in the last Office action, fails to teach or suggest the claimed limitations "**performing a positioning arithmetic operation using the high precision time information in place of time information sent from said GPS satellite**". However, after further reviewing different embodiment, e.g. FIGS. 3 and 5A, the aforementioned claimed limitations are found obvious in view of the teachings in FIGS. 3 and 5A. See further explanation in claim rejection below.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-8 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasner U.S. Patent 6,064,336 (previously cited) in view of Krasner U.S. Patent 6,150,980 (previously cited).

Regarding claim 1, Krasner invention is directed to a precision carrier frequency signal for calibrating a local oscillator of a GPS receiver, which is used to acquire GPS signals. The precision carrier frequency signal is used to calibrate the local oscillator such that the output of the local oscillator, which is used to acquire GPS signals, is modified by a reference signal generated from the precision carrier frequency signal.

In column 12 lines 45-67, FIG. 6A shows an embodiment of a GPS mobile unit of the present invention, which utilizes the precision carrier frequency signal received through the communication channel antenna 601. The antenna 601 is coupled to the modem 602, which is similar to the modem 22 in FIG. 1A, and this modem 602 is coupled to an automatic frequency control circuit 603 which locks to the precision carrier frequency signal sent by the base station (which may be considered to be or include a cellular telephone cell site transmitter). The precision carrier frequency signal corresponds to the claimed high precision frequency information.

The automatic frequency control circuit 603 provides an output 604, which is typically locked in frequency to the precision carrier frequency. This signal 604 is

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compared by the comparator 605 to the output of the GPS local oscillator 606, via interconnect 608. In view of that, the act of comparing the signal 604 with the output of the GPS local oscillator 606 corresponds to the claimed "*measuring a frequency variation of the oscillation frequency using the received high-precision frequency information*".

The result of the comparison performed by the comparator 605 is an error correction signal 610, which is provided as a correction signal to the GPS local oscillator 606. In this manner, the frequency synthesizer 609 provides a higher quality, calibrated local oscillation signal over interconnect 612 to the GPS down converter 614. Hence, the foregoing teachings correspond to the claimed step of "utilizing the result of the measurement to acquire a signal from a GPS satellite."

Krasner in US Patent '336' does not teach the steps of acquiring high precision time and performing a positioning arithmetic operation as set forth in the application claim.

[NEW ARGUMENTS] In US Patent '980', Krasner teaches a very similar apparatus for determining the time for a global positioning system receiver. In column 13 lines 10-67, see also FIGS. 1 & 3, in this particular embodiment, Krasner discloses the method of FIG. 5A will be discussed in relation to a combination GPS and cellular communication system as illustrated in FIG. 3. Remote unit 302 contains a combined GPS/communication receiver as illustrated in FIG. 1 first establishes a communication with the GPS base station 117 over the wireless communication link, step 500. According to an embodiment of the present invention, this wireless communication link

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is a cellular telephone link. ***After remote unit 302 has established a communication link, it finds the framing boundaries within the communication signal transmitted by cell site 304, step 502.*** The framing boundaries serve as the time indicator, which is the basis for deriving relative or absolute time related to GPS signal acquisition. In step 504, the remote unit 302 determines ***whether time data is encoded in the communication signal.*** If the cellular system utilizes the IS-95 CDMA or a similar standard, system time is transmitted relative to particular timing markers. If the cellular communication system does not provide system timing, an internal offset counter may be started and maintained within remote unit 302, step 506. This internal offset counter should be used to provide timing offset information to the base station to facilitate determination of time relative to a specific timing marker, which can be similarly observed and tagged by the GPS Base station 117. In step 510, the remote unit 302 determines the satellite position data for corresponding satellites in view. ***In conclusion, in light of the foregoing disclosure, the remote unit 302 determines the satellite position data based on the time data encoded in the communication signal in place of time information sent from the GPS satellite as claimed the application claim.***

Because, as suggested by Krasner in US Patent '980' (column 1 line 60 via column 2 line 7), it is desirable to provide a system for providing time information to a GPS receiver without requiring the receiver to derive timing information from GPS signals received from GPS satellites or from an internally generated clock and it is further desirable to provide a system which derives timing information for GPS

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applications from timing signals contained in communications transmissions received by the receiver, one of ordinary skill in the art would have been motivated to modify Krasner teachings in US Patent '336' to further incorporate the aforementioned teachings in US Patent '980'.

Regarding claim 5, in Krasner US Patent '336', see figure 1 A, the mobile receiver in Krasner invention further includes a battery & power regulator & power switches 36 to implement a particular sequence of power management according to one embodiment of the invention. As further disclosed in column 14 line 59 through column 15 line 59, Krasner discloses that it will be appreciated by one of ordinary skill in the art that there are numerous ways known in the art to reduce power, e.g. including slowing down the clock provided to a synchronous, clocked component as well as completely shutting down power to a particular component or turning off certain circuits of a component but not others. Krasner further states that it will also be appreciated that phase locked loops and oscillator circuits require start up and stabilization times, and thus not to be powered down completely. Hence, keeping the oscillator circuits on is to keep calibrate the local oscillator of a GPS receiver using precision carrier frequency signal. That step would be equivalent to the step as claimed in the patent application. Furthermore, it would have been obvious for one of ordinary skill in the art at the time the invention was made that Durboraw, III et al. receiver could be modified to include a power management scheme as taught by Krasner since reducing power consumption in a mobile receiver is well known in the art, and as pointed out above.

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Regarding claims 6-7, in US Patent '336', Krasner figure 6B shows another embodiment of a mobile GPS unit for calibrating the GPS local oscillator used to acquire the GPS signals in the mobile unit. In column 13, line 56 through column 14, line 13, a Costa Loop Demodulator 648 and Temperature Compensated Voltage Controlled Oscillator (TCVCXO) 645 employed in the Carrier Phase locking section 640 is phase-locking the incoming signal's carrier frequency. The Costa loop provides a frequency correction voltage to the reference frequency generator TCVCXO 645 that causes the output of TCVCXO 645 to be phase and frequency aligned with the carrier frequency. The output of TCVCXO 645 is then used to calibrate the GPS local oscillator.

Regarding claim 8, claim 8 is rejected on the same ground as for claim 1 because of similar scope.

Regarding claim 12, said claim is rejected on the same ground as for claim 5 because of similar scope.

Regarding claims 13-14, said claims are rejected on the same ground as for claim 6 because of similar scope.

Regarding claim 15, claim 15 is rejected on the same ground as for claim 1 because of similar scope.

Allowable Subject Matter

4. Claims 3-4 and 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCT

Khanh Tran 11/16/2006

Khanh Tran
Primary Examiner